BRIDGES

Bridges

Introduction

Army Corps of Engineers Section 404/Section 10 Permits (U.S.)

Excavation and/or discharges of dredged or fill materials in waters of the United States below the ordinary high water elevation requires a U.S. Army Corps of Engineer's Section 404 Permit prior to the commencement of construction. Section 404 of the Clean Water Act requires a permit for filling and grading work, mechanized land clearing, ditching or other excavation activity and piling installation. A Section 10 Permit is required for the obstruction or alteration of navigable waters of the U.S. This authority is based on the Rivers and Harbors Act and regulates work riverward or below the ordinary high water elevation of a navigable stream. Navigable waters of the U.S. are those waterways that are now used, have been used in the past, or may be used in the future to transport interstate or foreign commerce. Note that waterways that are navigable waters under the Rivers and Harbors Act are not necessarily the same as navigable waterways as defined by Indiana's Flood Control Act. Engineer Form 4345, *Application for a Department of Army Permit* is used to apply for these permits. Only one application is required. The Corps will issue the appropriate permit and/or letter of permission (Section 10 or Section 404) needed for the activity.

For the Section 404 permit in non-tidal waters, the limits of jurisdiction are as follows:

1. No wetlands* present - jurisdiction is between the limit of the ordinary high water elevation on each bank.
2. When adjacent wetlands are present - the jurisdiction extends beyond the ordinary high water mark to the limits of the adjacent wetlands.
3. When only wetlands are present, the limits of jurisdiction extend to the limits of the wetlands.

Waters of the United States include rivers, streams, creeks, intermittent tributaries, natural ponds, prairie potholes, impoundments, lakes and wetlands. They do not include land that was converted from wetland to cropland prior to December 23, 1985, nor do they include waste treatment systems such as treatment ponds or lagoons designed to meet the requirement of the Clean Water Act.

The Section 404/Section 10 Permit only covers those activities detailed by the plans and the conditions of the permit. If an activity is not shown either on the plans or in the permit conditions themselves, then these activities are not allowed if they occur in the waters of the United States. When a bridge is removed, unless the permit specifically allows it, the dropping of the entire bridge or bridge pieces into the waterway is a violation. If a work causeway or cofferdams are not mentioned in the permit or shown in the plans, then it is the contractor's responsibility to have the permit modified to allow this activity. INDOT is responsible for the proper disposal of items taken from our right-of-way, especially if it is to be placed within waters of the United States, including wetlands. This is true whether the items are placed in INDOT's or on private property. The project engineer/ supervisor should ensure that a permit has been obtained, if one is required, prior to approving such disposal.

Read the permit. It tells you what you can and cannot do. If an activity is not specifically allowed in the permit or shown in the plans, and the contractor wishes to conduct this activity, then it is the responsibility of the contractor to obtain a permit or modification of the permit for the activity. The Corps will consider modification of the terms and conditions of the permit if requested to do so. If it is mutually agreed to do so, the Corps of Engineers will give the permittee written notice of the modification, which will become effective on the date established by the Corps of Engineers.

Poor erosion control is another common problem associated with bridge projects. Embankment clearings that have been left unprotected, ditches serving as a direct conduit for construction runoff into the waterway, lack of or poor maintenance of sediment traps are all problem areas that the U.S. Army Corps of Engineers has mentioned.

The permit often contains conditions. Conditions of the permits may include items such as the following:

- no impacts to jurisdictional wetlands
- no silting and muddying of streams
- utilization of temporary seeding to avoid soil erosion
- no frequent fording of live streams

These conditions carry the force of law, and must be adhered to. They must be understood and complied with. They are currently being included in the letting package. The permit **must** be posted at the construction site. It is the project engineer's responsibility to be familiar with these conditions, and comply with them at all times. If there are conditions that you cannot feasibly comply with, contact the Division of Operations Support for assistance. Do not ignore any conditions. **Remember, if you have one permit for an activity, you are not exempted from obtaining all required permits for the same work. Make sure you have obtained all other required permits.**

* 'Wetlands' here means jurisdictional wetlands. A jurisdictional wetlands is an area that has undergone the process of identification and delineation as laid out in the January 1987 *Final Report by the Corps of Engineers Wetlands Delineation Manual,* Technical Report Y-87-1, and found to be consistent with the wetlands requirements of the manual.

See Army Corps of Engineers Section 404/Section 10 Permit (U.S.) in the Laws and Regulations Section.

Asbestos

Construction projects may involve exposure to asbestos with either bridge renovations or demolitions. The presence of asbestos on INDOT bridges occurs on occasion. When it is present, it is most commonly found on utilities, gunnite, bridge rail paint, various joints, and bridge seats.

Prior to the demolition or renovation of bridges, INDOT will undertake an asbestos inspection of the structure. The report of this inspection will be included in the contract. No demolition or renovation of bridges can occur until regulated asbestos containing material has been properly removed and disposed of. **Demolition projects, regardless of the presence or not of asbestos must be reported to IDEM's Office of Air Management at least 10 working days (Monday through Friday) prior to demolition. In Marion County, the Indianapolis Air Pollution Control Division must also be contacted.** Demolition is defined as the removal

of buildings or bridges, or the removal of supporting beams, walls, or structures. **Renovation, the modifying of an existing structure, projects** require notification of IDEM's Office of Air Management **at least 10 working days prior to renovation if:**

1. **≥ 260 linear feet, 160 square feet, or 35 cubic feet of regulated asbestos containing material that is to be stripped, removed, dislodged, cut, drilled or disturbed.**
2. < 260 linear feet, 160 square feet, or 35 cubic feet of regulated asbestos containing material is to be stripped, removed, dislodged, cut, drilled, or disturbed, **no notification is required**.
3. **Marion County only** - ≥ 25 linear feet and 15 square feet (Notify Indianapolis Air Pollution Control Division).

Notification must be done for each structure. Each structure requires its own notification. However, you may put up to 10 structures on one notification. No demolition or renovation of bridges can occur until regulated asbestos containing material has been properly removed and disposed of.

Bridge Asbestos Exclusion

To simplify future bridge projects, contractors for all bridge construction and rehabilitation projects should provide the project engineer a document indicating the following:

> ***I hereby certify that to the best of my knowledge no asbestos-containing material was used as a building material during this project.***

Having this statement on file exempts all new construction/renovation projects from future asbestos inspection and abatement. Please send a copy of this statement to the Environmental Services Section, Division of Pre-Engineering and Environment.

See the Asbestos Section for detailed information.

Construction in a Floodway

Any project involving construction, excavation, or placement of fill within the floodway of any river or stream unless exempted, requires the written approval of the Indiana Department of Natural Resources (IDNR) prior to initiating the activity. A floodway is defined as the channel of a river or stream and those portions of the flood plain adjoining the channel, which are reasonably required to carry and discharge the flood water or flood flow of any river or stream. Typically this is the 100 year floodway. Note that this is a different jurisdictional limit than the U.S. Army Corps of Engineers Section 404 or the Section 401 Water Quality Certification has. Often the floodway is a larger area than the waters of the U.S.

EXEMPTIONS

Drainage Area

Except for the construction of dams, dikes, or levees, work in floodways along rivers and streams where the drainage area is less than 1 square mile, requires no Construction in a Floodway Permit.

Bridge Exemption

Generally, any activity which disturbs soil or sediments within the floodway, and does not meet the requirements of the bridge exemption, requires a permit from IDNR. The Flood Control Act contains an exemption for certain bridge projects involving the construction or reconstruction of a state or county highway department bridge. In order for a bridge project to be exempt from obtaining a Construction in a Floodway permit, the following criteria must be met:

1. The project must be a state or county highway department project;
2. The project must be a bridge (IDNR considers a culvert to be a bridge) project;
3. The project must be located in a rural area. A rural area is defined as an area where:
    - A. The lowest floor elevation (including basement) of any residential, commercial, or industrial building impacted by the project is at least 2 feet above the 100 year flood elevation with the project in place;
    - B. The project is located outside the corporate boundaries of a consolidated or an incorporated city or town; and
    - C. The project is located outside of the territorial authority for comprehensive planning (generally a 2 mile buffer around a city or town).
4. The project must cross a stream having an upstream drainage area of less than fifty (50) square miles.

All four criteria must be met in order for a project to be eligible for the exemption.

If a bridge project does not qualify for the exemption, then a Construction in a Floodway Permit, and work occurs in the floodway, a permit must be obtained. **This exemption only applies to the Flood Control Act. If a bridge is to be constructed over a navigable waterway, or over or near a public freshwater lake, a permit will be required.**

Read the permit. It tells you what you can and cannot do. As with the U.S. Army Corps of Engineers Section 404 Permit and the Section 401 Water Quality Certification, the Construction in a Floodway Permit covers only those activities shown on the plans or specifically listed in the permit. No other activity is allowed in the floodway. For example, unless the permit specifically allows it, the dropping of the entire bridge or bridge pieces into the waterway is a violation. Likewise construction of a work causeway or cofferdams is not allowed unless it is specifically mentioned in the permit or shown in the plans. Should the contractor wish to conduct such activity, then it is contractor's responsibility to contact the IDNR to obtain

a waiver of the permit. INDOT is responsible for the proper disposal of items taken from INDOT right-of-way, especially if they are placed in the floodway. Such activity would require a permit.

Poor erosion control is another problem often associated with bridge projects. Embankment clearings that have been left unprotected, ditches serving as a direct conduit for construction runoff into the waterway, lack of or poor maintenance of sediment traps are all problem areas that IDNR has mentioned. The Construction in a Floodway Permit often contains conditions. Conditions of the permits may include items such as the following:

- no impacts to jurisdictional wetlands
- no in channel work from April 1 to June 30
- no frequent fording of live streams

These conditions carry the force of law, and must be adhered to. They must be understood and complied with. They are currently being included in the letting package. The permit must be posted at the construction site. It is the project engineer's responsibility to be familiar with these conditions, and comply with them at all times. If there are conditions that you cannot feasibly comply with, contact the Division of Operations Support for assistance. Do not ignore any conditions. **Remember, if you have one permit for an activity, you are not exempted from obtaining all required permits for the same work. Make sure you have obtained all other required permits.**

See the Construction in a Floodway Laws and Regulations section for more detailed information.

Section 401 Water Quality Certification

Excavation and/or discharges of dredged or fill materials in waters of the United States below the ordinary high water elevation on each bank requires a U.S. Army Corps of Engineer's Section 404 Permit and possibly a Section 401 Water Quality Certification prior to the commencement of construction. For non-tidal waters, the limits of jurisdiction are as follows:

1. No wetlands present - jurisdiction is between the limit of the ordinary high water elevation on each bank.
2. When adjacent wetlands are present - the jurisdiction extends beyond the ordinary high water mark to the limits of the adjacent wetlands.
3. When only wetlands are present, the limit of jurisdiction extends to the limits of the wetlands.

Waters of the United States, generally speaking, include rivers, streams, creeks, intermittent tributaries, natural ponds, prairie potholes, impoundments, lakes and wetlands.

The Section 401 Water Quality Certification is the state's certification to the U.S. Army Corps of Engineers that the project complies with the state's water quality standards. The Indiana Department of Environmental Management (IDEM) is responsible for the Section 401 Water Quality Certificate review process in Indiana.

As with the Corps of Engineers Section 404 Permit, when a bridge is removed, unless the permit specifically allows it, the dropping of the entire bridge or bridge pieces into the waterway is a violation. Poor erosion control is another problem often associated with bridge projects. Embankment clearings that have been left unprotected, ditches serving as a direct conduit for construction runoff into the waterway, lack of or poor maintenance of sediment traps are all problem areas that IDEM has mentioned.

The Section 401 Water Quality Certificate often contains conditions. Typically these conditions might include items such as:

- no vegetation removal beyond construction limits
- no in stream work between April 1 through June 30
- install and maintain erosion control features

These conditions carry the force of law, and must be adhered to. They must be understood and complied with. They are currently being included in the letting package, and also should be posted at the construction site at all times. It is the project engineer's responsibility to be familiar with these conditions, and comply with them. If there are conditions that you cannot feasibly comply with, contact the Division of Operations Support for assistance. Do not ignore any conditions. **Remember, if you have one permit for an activity, you are not exempted from obtaining all other required permits for the same work. Make sure you have obtained all required permits.**

See the Section 401 Water Quality Certification Section of the Laws and Regulations Section for further information.

Foundation Excavation

Archeological/Historic Preservation

During the environmental document preparation phase, the proposed right-of-way is cleared archeologically and historically. An archeological records check and an archeological reconnaissance, if necessary were conducted for the project area. Previously undisturbed existing and proposed right-of-ways are usually included in the archaeological reconnaissance. The findings of the archeological work and historical data are included in the environmental document.

Despite these precautions, on rare occasions, artifacts are discovered during construction. Construction crews and project engineers should be alert to the presence of:

- properties 50 years old or older,
- archeological artifacts (such as bones, stone tools including arrowheads, and pottery),
- features (such as shell or charcoal concentrations, foundations, etc.), and
- human remains.

If artifacts, features, or remains are uncovered during the foundation activity, state law requires that the work stop in the area of the discovery, and that the discovery be reported to the Division of Historic Preservation and Archaeology, IDNR, within 2 working days. **First notify the Division of Operations Support of the finding, then report the discovery to IDNR at (317) 232-1646, FAX (317) 232-8036. Do not allow anyone to collect artifacts from the discovery except the appropriate IDNR or INDOT archaeological staff.** The archaeological staff will delineate the limits of the work stoppage. Work on the remainder of the project can proceed as normal. If the discovery is of sufficient importance, IDNR may wish to properly

excavate the area and have it guarded. If this occurs, contact the Division of Operations Support for guidance.

See Archeological and Historic Section in the Laws and Regulations Section for further information.

Army Corps of Engineers Section 404/Section 10 Permits (U.S.)

Excavation and/or discharges of dredged or fill materials in waters of the United States below the ordinary high water elevation on each bank requires a U.S. Army Corps of Engineer's Section 404 Permit prior to the commencement of construction. Section 404 of the Clean Water Act requires a permit for filling and grading work, mechanized land clearing, ditching or other excavation activity and piling installation. A Section 10 Permit is required for the obstruction or alteration of navigable waters of the U.S. This authority is based on the Rivers and Harbors Act and regulates work riverward or below the ordinary high water elevation of a navigable stream. Navigable waters of the U.S. are those waterways that are now used, have been used in the past, or may be used in the future to transport interstate or foreign commerce. Engineer Form 4345, *Application for a Department of Army Permit* is used to apply for these permits. Only one application is required should both permits be required. The Corps will issue the appropriate permit and/or letter of permission (Section 10 or Section 404) needed for the activity.

For the Section 404 permit in non-tidal waters, the limits of jurisdiction are as follows:

1. No wetlands* present - jurisdiction is between the limit of the ordinary high water elevation on each bank.
2. When adjacent wetlands are present - the jurisdiction extends beyond the ordinary high water mark to the limits of the adjacent wetlands.
3. When only wetlands are present, the limits of jurisdiction extend to the limits of the wetlands.

Waters of the United States include rivers, streams, creeks, intermittent tributaries, natural ponds, prairie potholes, impoundments, lakes and wetlands. They do not include land that was converted from wetland to cropland prior to December 23, 1985, nor do they include waste treatment systems such as treatment ponds or lagoons designed to meet the requirement of the Clean Water Act.

INDOT is responsible for the proper disposal of items taken from our right-of-way, especially if it is to be placed within waters of the United States, including wetlands. This is true whether the items are placed in INDOT's or on private property. The project engineer/ supervisor should ensure that a permit has been obtained, if one is required, prior to approving such disposal.

The Section 404/Section 10 Permit only covers those activities detailed by the plans and the conditions of the permit. If an activity is not shown either on the plans or in the permit conditions themselves, then these activities are not allowed if they occur in the waters of the United States. For example, the clearing or filling of an area located within waters of the United States that is not specifically shown on the plans should not be allowed to occur. This is especially true for wetlands areas. Read the permit. It tells you what you can and cannot do. If an activity is not specifically allowed in the permit or shown in the plans, and the contractor wishes to conduct this activity, then it is the responsibility of the contractor to obtain a permit or modification of the permit for the activity. The Corps will consider modification of the

terms and conditions of the permit if requested to do so. If it is mutually agreed to do so, the Corps of Engineers will give the permittee written notice of the modification, which will become effective on the date established by the Corps of Engineers.

The permit often contains conditions. Conditions of the permits may include items such as the following:

- no removal of vegetation beyond the construction limits
- do not clear large trees between April 15 to September 15 - this condition would be included to protect the Indiana bat.
- do not work in the stream/river during spawning/migration season
- no impacts to jurisdictional wetlands
- no silting and muddying of streams
- utilization of temporary seeding to avoid soil erosion
- no frequent fording of live streams

These conditions carry the force of law, and must be adhered to. They must be understood and complied with. They are currently being included in the letting package. The permit must be posted at the construction site. It is the project engineer's responsibility to be familiar with these conditions, and comply with them at all times. If there are conditions that you cannot feasibly comply with, contact the Division of Operations Support for assistance. Do not ignore any conditions. **Remember, if you have one permit for an activity, you are not exempted from obtaining all required permits for the same work. Make sure you have obtained all other required permits.**

* 'Wetlands' here means jurisdictional wetlands. A jurisdictional wetlands is an area that has undergone the process of identification and delineation as laid out in the January 1987 *Final Report by the Corps of Engineers Wetlands Delineation Manual,* Technical Report Y-87-1, and found to be consistent with the wetlands requirements of the manual.

See Army Corps of Engineers Section 404/Section 10 Permit (U.S.) in the Laws and Regulations Section.

Coast Guard (U.S.) Bridge Permit and Activity Letter

The US Coast Guard protects navigable waters of the U.S., in part, by regulating bridge-related activities. Navigable waters are any waters that are, once were, or may be used in the future to transport interstate or foreign commerce. A bridge may not be constructed across any of the listed navigable waters shown in the Laws and Regulations Section until the US Coast Guard has approved the location and the plans. Approval is shown by the issuance of a Bridge Permit. The 8th and 9th Coast Guard Districts regulate activities for the State of Indiana. The jurisdiction of each district and their areas of concern related to bridges are described in the Laws and Regulations Section.

This permit often contains conditions that carry the force of law, and must be adhered to. The conditions of the permit must be understood and complied with. They are currently being included in the letting package. The permit should be available at the construction site at all times. The Project Engineer (PE) is responsible for being familiar with the conditions of the permit and complying with the conditions. If there are conditions that the Project Engineer cannot feasibly comply with, the PE should contact the Division of Operations Support for

assistance. The conditions listed within the permit cannot be ignored. Remember, if there is one permit for an activity, the project is not exempt from obtaining all required permits for the same work. The PE must make sure that all required permits have been obtained for the project.

Construction in a Floodway

Any project involving construction, excavation, or placement of fill within the floodway of any river or stream unless exempted, requires the written approval of the Indiana Department of Natural Resources (IDNR) prior to initiating the activity. A floodway is defined as the channel of a river or stream and those portions of the flood plain adjoining the channel, which are reasonably required to carry and discharge the flood water or flood flow of any river or stream. Typically this is the 100 year floodway. Note that this is a different jurisdictional limit than the U.S. Army Corps of Engineers Section 404 or the Section 401 Water Quality Certification has. Often the floodway is a larger area than the waters of the U.S.

EXEMPTIONS

Drainage Area

Except for the construction of dams, dikes, or levees, work in floodways along rivers and streams where the drainage area is less than 1 square mile, requires no Construction in a Floodway Permit.

Bridge Exemption

Generally, any activity which disturbs soil or sediments within the floodway, and does not meet the requirements of the bridge exemption, requires a permit from IDNR. The Flood Control Act contains an exemption for certain bridge projects involving the construction or reconstruction of a state or county highway department bridge. In order for a bridge project to be exempt from obtaining a Construction in a Floodway permit, the following criteria must be met:

1. The project must be a state or county highway department project;
2. The project must be a bridge (IDNR considers a culvert to be a bridge) project;
3. The project must be located in a rural area. A rural area is defined as an area where:
    A. The lowest floor elevation (including basement) of any residential, commercial, or industrial building impacted by the project is at least 2 feet above the 100 year flood elevation with the project in place;
    B. The project is located outside the corporate boundaries of a consolidated or an incorporated city or town; and
    C. The project is located outside of the territorial authority for comprehensive planning (generally a 2 mile buffer around a city or town).
4. The project must cross a stream having an upstream drainage area of less than fifty (50) square miles.

All four criteria must be met in order for a project to be eligible for the exemption.

If a bridge project does not qualify for the exemption, then a Construction in a Floodway Permit, and work occurs in the floodway, a permit must be obtained. **This exemption only applies to the Flood Control Act. If a bridge is to be constructed over a navigable waterway, or over or near a public freshwater lake, a permit will be required.**

Read the permit. It tells you what you can and cannot do. As with the U.S. Army Corps of Engineers Section 404 Permit and the Section 401 Water Quality Certification, the Construction in a Floodway Permit covers only those activities shown on the plans or specifically listed in the permit. No other activity is allowed in the floodway such as clearing or filling beyond the construction limits. Should the contractor wish to conduct such activity, then it is contractor's responsibility to contact the IDNR to obtain a waiver of the permit. INDOT is responsible for the proper disposal of items taken from INDOT right-of-way, especially if they are placed in the floodway. Such activity would require a permit.

The Construction in a Floodway Permit often contains conditions. Conditions of the permits may include items such as the following:

- no impacts to jurisdictional wetlands
- no in channel work from April 1 to June 30
- no frequent fording of live streams

These conditions carry the force of law, and must be adhered to. They must be understood and complied with. They are currently being included in the letting package. The permit must be posted at the construction site. It is the project engineer's responsibility to be familiar with these conditions, and comply with them at all times. If there are conditions that you cannot feasibly comply with, contact the Division of Operations Support for assistance. Do not ignore any conditions. Waivers can be obtained for certain conditions. **Remember, if you have one permit for an activity, you are not exempted from obtaining all required permits for the same work. Make sure you have obtained all other required permits.**

An IDNR Construction in a Floodway Permit can also serve as a Navigable Waterway Permit. However, exemption from the Construction in a Floodway Permit does not exempt you from obtaining a Navigable Waterway Permit. Remember, if you have one permit for an activity, you are not exempted from obtaining all required permits for the same work. Make sure you have obtained all other required permits.

See the Construction in a Floodway Laws and Regulations Section for more detailed information.

Dewatering Well Installation

Dewatering well installation, if temporary, requires a report to be sent to IDNR, Division of Water. If well is to be permanent then a registration of the well will be required. The Water Rights: Emergency Regulation Act provides protection for domestic well owners against the impact of high capacity ground-water pumpage if it substantially lowers water levels, resulting in the failure of a domestic well. INDOT, or its contractors may be liable under this statute if dewatering operations associated with construction result in failure of (a) neighboring domestic well(s).

Who Must Register

Indiana Code 14-25-7-15 requires every person who has a significant water withdrawal facility to register that facility with the Natural Resources Commission. A water withdrawal

facility can be considered to include any and all well, surface water intakes, pumping apparatus or other installation which supply water to a common collection and/or distribution point. As defined by the statute a significant water withdrawal facility means the water withdrawal facilities of a person that, in the aggregate from all sources and by all methods, has the capability of withdrawing more than one-hundred thousand (100,000) gallons of ground water, surface water, or ground and surface water combined in one (1) day; however, this does not include water withdrawal facilities located in or on an off stream impoundment that is principally supplied by a significant water withdrawal facility.

See Dewatering Well Installation Section in the Laws and Regulations Section.

Ditch Reconstruction

Any person proposing to undertake activities affecting ditches or drains within ½ mile of a public fresh water lake, where the bottom elevation of the ditch would be lower than the legal or average water level of the lake must obtain a permit from the Indiana Department of Natural Resources. A public freshwater lake is a naturally occurring body of water for which access is provided by the property owner to the general public, includes only water bodies located within or bordering the State of Indiana **except** Lake Michigan, lakes within the city of Hammond, man-made lakes, borrow pits, sinkholes, or privately owned water bodies associated with surface coal mining.

Exemption from the Construction in a Floodway Permit does not exempt you from obtaining a Permit. Remember, if you have one permit for an activity, you are not exempted from obtaining all required permits for the same work. Make sure you have obtained all other required permits.

See the Ditch Reconstruction Section of the Laws and Regulations Section for detailed information.

Endangered Species

Various species of mussels are endangered and are found in major and some minor waterways in Indiana. The environmental document and the permit **(Construction in a Floodway Permit issued by the Department of Natural Resources, Division of Water, under the Flood Control Act, IC 14-28-1)** which is included in the contract documents, should mention any endangered species in the area and the protective measures that are required to ensure that no impact is made to either the life forms or their habitat. Special conditions may be attached to the permits to protect the species of mussels. They must be adhered to. They may include the use of cofferdams, in channel time limits, and specific erosion control measures. To protect these mussels during the foundation excavation, care must be taken not to introduce excessive sediment or runoff into the waterway.

Likewise, removal of large trees with loose bark adjacent to the foundation excavation work may impact the Indiana bat. Time constraints may be placed on the clearing of the right-of-way to protect the bats. These time constraints must be adhered to. If a construction project is scheduled to start at the beginning of these time constraints and the right-of-way has been secured; it might be wise to send INDOT personnel out to fell all large trees prior to this time

period (April 15 to September 15). If previously unknown endangered species are found at a project site, contact the Division of Operations Support immediately at (317) 234-0409 for assistance.

See the Endangered Species Section of the Laws and Regulations Section for detailed information (State Endangered Species Act IC 14-22-34).

Fugitive Dust

Fugitive dust means the generation of particulate matter to the extent that some portion of the material escapes beyond the property line or boundaries of the property, right-of-way, or easement on which the source is located regardless of whether from a single operation or a number of operations. Simply, if at least fifty percent (50%) of the dust can be breathed in or is visible crossing the right-of-way, it is fugitive dust.

Fugitive dust may be the excavation of the foundation. Indiana code states that fugitive dust from construction or demolition where **every reasonable precaution has been taken in minimizing fugitive dust emissions** is exempted from the fugitive dust rule. This code also provides some fugitive dust control measures. These include spraying with water or treating with an approved oil or chemical dust suppressant. These precautions are especially important on dry, windy day. Every reasonable precaution must be taken by the contractor to prevent dust from crossing the right-of-way.

See the Fugitive Dust Section of the Laws and Regulations Section for detailed information.

Hazardous Materials

During the early development of INDOT projects, the proposed right-of-way undergoes an investigation for the presence of hazardous waste. If found, INDOT attempts to have the site cleaned prior to the purchase of the property. Although it is desirable, hazardous materials cannot always be taken care of prior to the construction of INDOT projects. Known or unknown hazardous waste sites may have to be dealt with on INDOT right-of-way during the construction phase.

During the foundation excavation, workers may come into contact with contaminated, excavated materials. Be on the lookout for the following indications that you may be dealing with hazardous waste:

- the discovery of abandoned drums, barrels, old paint cans, chemical containers, tanks, pits, lagoons or ditches, discharge pipes
- surface water plumes
- debris piles
- raw material storage piles
- areas with burn marks
- an area that used to be a loading ramp or railroad staging area
- barren soil areas
- obvious changes in vegetation

- dead trees/shrubs
- recent ground disturbances
- surface staining or discoloration of soils
- odors

If soils are suspected to contain hazardous material, stop work and remove all personnel from the area immediately and notify the Division of Operations Support. Cordon off the area until the contaminated materials have been classified. Testing may be required to determine the waste classification of the contaminated material. Only properly trained (INDOT and contractor) personnel should be allowed in the area of the hazardous material. Contact the Division of Operations Support for guidance.

The hazardous material, if it is to be disposed of, must be disposed in a hazardous waste landfill. A hazardous waste manifest signed by the generator (INDOT) must accompany each load of hazardous waste from cradle to grave. INDOT must notify IDEM of our activities and obtain an EPA Identification Number. The manifest certification must be signed by INDOT and the transporter and have the date of acceptance of waste. *The contractor can legally sign the forms if the Commissioner of INDOT executes a written authorization/power of attorney instrument.* INDOT must retain one copy of the report and give the transporter the remaining copies of the manifest.

See the Hazardous Materials Section of the Laws and Regulations Section for further information.

In stream Blasting Permit

Indiana Fish and Wildlife Code requires that a permit be procured from the Indiana Department of Natural Resources prior to setting, using or discharging dynamite or other explosive in any waters of the State.

Exemption from the Construction in a Floodway Permit does not exempt you from obtaining an In-stream Blasting Permit. Remember, if you have one permit for an activity, you are not exempted from obtaining all required permits for the same work. Make sure you have obtained all other required permits.

See the In stream Blasting Permit Section of the Laws and Regulations Section for further information.

Karst

Runoff from the excavation of the foundation is an activity that may endanger the ground water quality in karst regions. If the project is located near a sinkhole or other karst feature, the regulatory agencies will require control of the drainage such that the acute and chronic criteria for surface water quality criteria are not exceeded. It is important therefore, that you are aware of potential environmental impacts that could occur if construction activities were conducted in the usual manner. In addition to the possible lethal effects on wildlife, contamination of ground water used for drinking water could occur. The use of peat and other types of filters and wide grassy areas to catch and clean contaminants are some methods currently being used by INDOT to protect the groundwater. Likewise a project in a karst area might include the construction of detention and/or retention basins. Regular inspections should be scheduled to ensure minimum

and satisfactory compliance with the Memorandum of Understanding. Any sinkhole modification may result in the need for an EPA Injection Well Permit. The Division of Operations Support should be contacted in this event or to answer any question concerning karst area activities.

See the Karst Section of the Laws and Regulations Section for further information.

Lake Preservation Act (Permit)

The Lake Preservation Act mandates that any person proposing to perform an activity at or lakeward of the legal shoreline or average normal water level (mark) of a public freshwater lake must obtain written approval of the Indiana Department of Natural Resources prior to initiating the activity. A *public freshwater lake* is a naturally occurring body of water for which access is provided by the property owner to the general public, **excluding** Lake Michigan, lakes within the city of Hammond, borrow pits, sinkholes, or privately owned water bodies associated with surface coal mining. Most public freshwater lakes are located in the northern part of the state.

Exemption from the Construction in a Floodway Permit does not exempt you from obtaining a Lake Preservation Act Permit. Remember, if you have one permit for an activity, you are not exempted from obtaining all required permits for the same work. Make sure you have obtained all other required permits.

See the Lake Preservation Act Section of the Laws and Regulations Section for further information.

Navigable Waterway Permit

A Navigable Waterway permit is required from IDNR when working below the ordinary high water mark within the floodplain of a navigable waterway. This includes any activity which disturbs sediments below the high water mark, including foundation excavation. A list of navigable waterways is included in the Laws and Regulations Section under Navigable Waterway Permit.

An IDNR Construction in a Floodway Permit can also serve as a Navigable Waterway Permit. However, exemption from the Construction in a Floodway Permit does not exempt you from obtaining a Navigable Waterway Permit. Remember, if you have one permit for an activity, you are not exempted from obtaining all required permits for the same work. Make sure you have obtained all other required permits.

See the Navigable Waterway Permit Section of the Laws and Regulations Section for further information.

Rule 5 - Erosion Control

The requirements of Rule 5 apply to projects, which disturb 1 acre or more of total land area. Projects that result in the disturbance of less than 1 acre, but are part of a larger common

plan of development or sale are also subject to Rule 5. If the project falls under neither of these categories, then Rule 5 does not apply. However, erosion control practices should still be utilized at the site regardless of the land area that is disturbed. Often erosion control measures are conditions of Construction in a Floodway, U.S. Army Corps Section 404 Permits, and Section 401 Water Quality Certifications.

For INDOT projects, an erosion control plan is developed during the design phase. This plan, after being filed and reviewed by the appropriated Soil and Water Conservation District (if it falls under the jurisdiction of Rule 5) is incorporated into the plans and is included in the contract documents. If the project falls under the jurisdiction of Rule 5, INDOT also prepares and submits to IDEM the Notice of Intent. Since construction activity cannot begin until the Notice of Intent is filed, the project engineer/supervisor should notify the contractor of such filing.

It is the responsibility of the project engineer to ensure that the contractor has properly implemented and maintained the erosion control plan. Both INDOT and the contractor should continually monitor the erosion control measures to determine if they are working, or if they need maintenance. Steps should be taken to change the plan if it is not effective. Frequent temporary seeding can be one of your most effective tools in controlling erosion. Contact the local representative of each Soil and Water Conservation District for assistance in developing more effective erosion control measures. They are excellent resource people for either the contractor or the project engineer/supervisor.

A local Soil and Water Conservation District representative, or representative from IDEM or IDNR may visit the site during the construction period to determine the effectiveness of the erosion control plan. Cooperate with these representatives to ensure that the erosion control measures that are being used are the most effective for the job.

See the Rule 5-erosion control regulations section for detailed information.

Section 401 Water Quality Certification

Excavation and/or discharges of dredged or fill materials in waters of the United States below the ordinary high water elevation on each bank requires a U.S. Army Corps of Engineer's Section 404 Permit and possibly a Section 401 Water Quality Certification prior to the commencement of construction. For non-tidal waters, the limits of jurisdiction are as follows:

1. No wetlands present - jurisdiction is between the limit of the ordinary high water elevation on each bank.
2. When adjacent wetlands are present - the jurisdiction extends beyond the ordinary high water mark to the limits of the adjacent wetlands.
3. When only wetlands are present, the limits of jurisdiction extend to the limits of the wetlands.

Waters of the United States, generally speaking, include rivers, streams, creeks, intermittent tributaries, natural ponds, prairie potholes, impoundments, lakes and wetlands.

The Section 401 Water Quality Certification is the state's certification to the U.S. Army Corps of Engineers that the project complies with the state's water quality standards. The Indiana Department of Environmental Management (IDEM) is responsible for the Section 401 Water Quality Certificate review process in Indiana. The Section 401 Water Quality Certificate often contains conditions. Typically these conditions might include items such as:

- no impacts to jurisdictional wetlands
- no silting and muddying waters of United States
- utilization of temporary seeding to avoid soil erosion
- no vegetation removal beyond construction limits
- no in-stream work between April 1 through June 30
- install and maintain erosion control features

These conditions carry the force of law, and must be adhered to. They must be understood and complied with. They are currently being included in the letting package, and also should be posted at the construction site at all times. It is the project engineer's responsibility to be familiar with these conditions, and comply with them. If there are conditions that you cannot feasibly comply with, contact the Division of Operations Support for assistance. Do not ignore any conditions. **Remember, if you have one permit for an activity, you are not exempted from obtaining all other required permits for the same work. Make sure you have obtained all required permits.**

See the Section 401 Water Quality Certification Section of the Laws and Regulations Section for further information.

Solid Waste Disposal

The disposal of uncontaminated dirt, rocks, bricks, concrete and road demolition waste materials are not subject to the solid waste regulations. INDOT is responsible for the proper disposal of items taken from INDOT right-of-way. The materials listed above may be disposed of on INDOT property, private property, or a sanitary landfill. If Municipal Solid Waste/trash is collected from INDOT right-of-way, it must be disposed of at certified Municipal Solid Waste Landfill (MSWLF). No material will be disposed of in waters of the US or in a floodway without the proper permits. If the material (uncontaminated dirt, rocks, bricks, concrete and road demolition waste) is to be disposed of on INDOT property the Project Engineer shall be notified. The material shall be placed in an area where construction activity will not occur. Disposal of the waste materials on private property will require written notification from the property owner. Necessary arrangements shall be made with the owner for obtaining a suitable disposal location.

See the Solid Waste Disposal Section of the Laws and Regulations Section for further information.

Spill Response

Hazardous material releases, oil spills, fish/animal kills and radiological incidents must be reported to Office of Emergency Response, IDEM **(888) 233-7745.** This should occur as soon as action has been taken to either contain/control the extent of the release, or protect persons, animals or fish from harm or further harm. Appropriate response actions for spills occurring on project sites, in order:

1. Identify the spilled material from a safe distance,

2. Contain the spilled material or block/restrict its flow using absorbent booms/pillows, dirt, sand or by other available means,
3. Cordon off the area of the spill,
4. Deny entry to the cordoned off area to all but response personnel, and
5. Contact OER/IDEM then Operations Support.

See the Spill Response Section of the Laws and Regulations Section for further information.

Underground Storage Tanks/Leaking Underground Storage Tanks

Unknown and/or unregistered underground storage tanks (UST) and leaking underground storage tanks (LUST) are occasionally encountered during construction projects. State and federal regulations regarding USTs are enforced by the Indiana Department of Environmental Management (IDEM). Notification of IDEM and submittal of closure reports are usually required, depending on when the tank is discovered and whether or not it is a regulated UST. A contractor or individual certified through the Office of the State Fire Marshall (OSFM) must be on-site while all UST work is being conducted. If contaminated soil or groundwater is discovered during the tank removal, then IDEM must be notified within 24 hours, and a LUST Site Investigation report and Corrective Action Plan must be prepared and submitted.

For sites with **small quantities** of soil contamination only, excavation and disposal at a solid waste landfill may be the quickest solution. However, land filling simply moves the contaminant from one location to another, and should therefore be avoided whenever possible. Where contaminated soil is encountered within the right-of-way, and the source of contamination (the leaking underground storage tank) is not located on INDOT property or removed by INDOT's contractor then INDOT is **not** considered the owner/operator, and the contaminated soil can be returned to the excavation trench provided the following conditions have been met:

1. underground equipment, such as a storm sewer line, will not act as a conduit for further migration of the contamination;
2. impervious geological features will not be disturbed or punctured in a way that allows contamination to migrate into an aquifer;
3. cross-contamination of stacked fill material which expands the area of contamination will not be allowed;
4. migration of contamination in storm water runoff due to the stockpiling of excavated soil cannot be allowed (stockpiled contaminated soil should be returned to the trench by the end of the day, or covered with plastic until it can be redeposited); and
5. Inversion of layers of contamination in the redeposited soil cannot be allowed.

If emergency conditions exist, then IDEM must be notified immediately.

See the UST/LUST Regulations Section for detailed information.

Well Abandonment (Oil and Gas)

The procedure for well abandonment is very specific. An inspector from the Division of Oil and Gas (IDNR) **MUST** be present when the well is plugged. If an existing oil or gas related well is discovered during construction, contact the Division of Operation Support for details regarding abandonment requirements.

See the Well Abandonment, Oil and Gas Wells Section of the Laws and Regulations Section for further information.

Water Well Abandonment

In Indiana, it is not uncommon to see an older farmstead or other residence with a hand pump or a dug well covered over with rotting boards. These types of situations are a threat to human safety as well as potential sources of ground water contamination. The water well drilling laws require that these abandoned wells must be sealed with either a threaded or welded cap over the casing or by filling the well casing with impermeable material. The procedure for well abandonment is very specific and requires a certified well driller. In addition, the IDNR, Division of Water, should be notified in writing of abandonment within thirty days after plugging is completed.

According to Indiana code, *"A well which has not been used for more than three (3) months without being permanently abandoned must be sealed at or above the ground surface by a welded, threaded or mechanically attached watertight cap. The well shall be maintained so that the well does not become a source or channel of ground water contamination."*

See the Water Well Abandonment Section of the Laws and Regulations Section for further information.

Cofferdams

Army Corps of Engineers Section 404/Section 10 Permits (U.S.)

Excavation and/or discharges of dredged or fill materials in waters of the United States below the ordinary high water elevation on each bank requires a U.S. Army Corps of Engineer's Section 404 Permit prior to the commencement of construction. Section 404 of the Clean Water Act requires a permit for filling and grading work, mechanized land clearing, ditching or other excavation activity and piling installation. A Section 10 Permit is required for the obstruction or alteration of navigable waters of the U.S. This authority is based on the Rivers and Harbors Act and regulates work riverward or below the ordinary high water elevation of a navigable stream. Navigable waters of the U.S. are those waterways that are now used, have been used in the past, or may be used in the future to transport interstate or foreign commerce. Note that waterways that are navigable waters under the Rivers and Harbors Act are not necessarily the same as navigable waterways as defined by Indiana's Flood Control Act. Engineer Form 4345,

Application for a Department of Army Permit is used to apply for these permits. Only one application is required should both permits be required. The Corps will issue the appropriate permit and/or letter of permission (Section 10 or Section 404) needed for the activity.

For the Section 404 permit in non-tidal waters, the limits of jurisdiction are as follows:

1. No wetlands* present - jurisdiction is between the limit of the ordinary high water elevation on each bank.
2. When adjacent wetlands are present - the jurisdiction extends beyond the ordinary high water mark to the limits of the adjacent wetlands.
3. When only wetlands are present, the limit of jurisdiction extends to the limits of the wetlands.

Waters of the United States include rivers, streams, creeks, intermittent tributaries, natural ponds, prairie potholes, impoundments, lakes and wetlands. They do not include land that was converted from wetland to cropland prior to December 23, 1985, nor do they include waste treatment systems such as treatment ponds or lagoons designed to meet the requirement of the Clean Water Act.

INDOT is responsible for the proper disposal of items taken from our right-of-way, especially if it is to be placed within waters of the United States, including wetlands. This is true whether the items are placed in INDOT's or on private property. The project engineer/ supervisor should ensure that a permit has been obtained, if one is required, prior to approving such disposal.

The Section 404/Section 10 Permit only covers those activities detailed by the plans and the conditions of the permit. If an activity is not shown either on the plans or in the permit conditions themselves, then these activities are not allowed if they occur in the waters of the United States. The construction of a cofferdam in and of itself may require a permit. The use of a cofferdam may or may not be included in the permit that INDOT obtains. If it is not mentioned, and the contractor chooses to construct one, then it is his responsibility to obtain a permit for this activity. The project engineer should make sure that the contractor has the permit. Read the permit. It tells you what you can and cannot do. If an activity is not specifically allowed in the permit or shown in the plans and the contractor wishes to conduct this activity, then it is the responsibility of the contractor to obtain a permit or modification of the permit for the activity. The Corps will consider modification of the terms and conditions of the permit if requested to do so. If it is mutually agreed to do so, the Corps of Engineers will give the permittee written notice of the modification, which will become effective on the date established by the Corps of Engineers.

The permit often contains conditions. Conditions of the permits may include items such as the following:

-no impacts to jurisdictional wetlands

-no silting and muddying of streams

-do not work in the stream/river during spawning/migration season *(If the cofferdam is already constructed and operative, then work may occur within, and only within, the cofferdam during the restricted in channel work time period.)*

-when dewatering the cofferdam, the sediment laden water should not be emptied directly into the waterway. Instead it should be either filtered through silt screens or some similar method to remove the sediments, or placed in a sediment pond until the

sediment has dropped out. Then the water can be emptied back into the waterway

These conditions carry the force of law, and must be adhered to. They must be understood and complied with. They are currently being included in the letting package. The permit must be posted at the construction site. It is the project engineer's responsibility to be familiar with these conditions, and comply with them at all times. If there are conditions that you cannot feasibly comply with, contact the Division of Operations Support for assistance. Do not ignore any conditions. **Remember, if you have one permit for an activity, you are not exempted from obtaining all required permits for the same work. Make sure you have obtained all other required permits.**

* 'Wetlands' here means jurisdictional wetlands. A jurisdictional wetlands is an area that has undergone the process of identification and delineation as laid out in the January 1987 *Final Report by the Corps of Engineers Wetlands Delineation Manual,* Technical Report Y-87-1, and found to be consistent with the wetlands requirements of the manual.

See Army Corps of Engineers Section 404/Section 10 Permit (U.S.) in the Laws and Regulations Section.

Coast Guard (U.S.) Bridge Permit and Activity Letter

The US Coast Guard protects navigable waters of the U.S., in part, by regulating bridge-related activities. Navigable waters are any waters that are, once were, or may be used in the future to transport interstate or foreign commerce. A bridge may not be constructed across any of the listed navigable waters shown in the Laws and Regulations Section until the US Coast Guard has approved the location and the plans. Approval is shown by the issuance of a Bridge Permit. The 8th and 9th Coast Guard Districts regulate activities for the State of Indiana. The jurisdiction of each district and their areas of concern related to bridges are described in the Laws and Regulations Section.

The construction of a cofferdam will require Coast Guard approval. The use of a cofferdam may or may not be included in the permit that INDOT obtains. If it is not mentioned and the contractor chooses to construct one, then it is the responsibility of the contractor to obtain approval from the Coast Guard for this activity. The approval letters with conditions will be issued to the State of Indiana (INDOT). The Project Engineer should make sure that the Coast Guard has approved the work before any work related to this subject begins.

The approval from the Coast Guard will contain conditions. The conditions carry the force of law, and must be adhered to. They must be understood and complied with. One such condition for construction of a cofferdam might be that when dewatering the cofferdam, the sediment-laden water should not be emptied directly into the waterway. Instead it should either be filtered through a silt screen or some similar method to remove the sediments, or placed in a sediment pond until the sediment is dropped out. Then the water can be emptied back into the waterway.

Conditions of the permits are currently being included in the letting package. The permit should be available at the construction site at all times. If there are conditions that you cannot feasibly comply with, contact the Division of Operations Support for assistance. The conditions set forth in any permit or approval letter cannot be ignored. **If you have one permit for an**

activity, you are not exempted from obtaining all required permits for the same work. Make sure you have obtained all other required permits.

See Coast Guard (U.S.) Bridge Permit Section, Laws and Regulations Section.

Construction in a Floodway

Any project involving construction, excavation, or placement of fill within the floodway of any river or stream unless exempted, requires the written approval of the Indiana Department of Natural Resources (IDNR) prior to initiating the activity. A floodway is defined as the channel of a river or stream and those portions of the flood plain adjoining the channel, which are reasonably required to carry and discharge the flood water or flood flow of any river or stream. Typically this is the 100 year floodway. Note that this is a different jurisdictional limit than the U.S. Army Corps of Engineers Section 404 or the Section 401 Water Quality Certification has. Often the floodway is a larger area than the waters of the U.S.

EXEMPTIONS

Drainage Area

Except for the construction of dams, dikes, or levees, work in floodways along rivers and streams where the drainage area is less than 1 square mile, requires no Construction in a Floodway Permit.

Bridge Exemption

Generally, any activity which disturbs soil or sediments within the floodway, and does not meet the requirements of the bridge exemption, requires a permit from IDNR. The Flood Control Act contains an exemption for certain bridge projects involving the construction or reconstruction of a state or county highway department bridge. In order for a bridge project to be exempt from obtaining a Construction in a Floodway permit, the following criteria must be met:

1. The project must be a state or county highway department project;
2. The project must be a bridge (IDNR considers a culvert to be a bridge) project;
3. The project must be located in a rural area. A rural area is defined as an area where:
   - A. The lowest floor elevation (including basement) of any residential, commercial, or industrial building impacted by the project is at least 2 feet above the 100 year flood elevation with the project in place;
   - B. The project is located outside the corporate boundaries of a consolidated or an incorporated city or town; and
   - C. The project is located outside of the territorial authority for comprehensive planning (generally a 2 mile buffer around a city or town).
4. The project must cross a stream having an upstream drainage area of less than fifty (50) square miles.

All four criteria must be met in order for a project to be eligible for the exemption.

If a bridge project does not qualify for the exemption, then construction of a cofferdam in and of itself may require a Construction in a Floodway Permit. The use of a cofferdam may or may not be included in the permit that INDOT obtains. If it is not mentioned, and the contractor chooses to construct one, then it is his responsibility to obtain a permit for this activity. The project engineer should make sure that the contractor has the permit. Typically, IDNR requires only two to three weeks to assess applications for structures or work within a floodway if it is associated with a previously approved project. Otherwise 90 to 180 days is required to complete a project review. **This exemption only applies to the Flood Control Act. If a bridge is to be constructed over a navigable waterway, or over or near a public freshwater lake, a permit will be required.**

Read the permit. It tells you what you can and cannot do. As with the U.S. Army Corps of Engineers Section 404 Permit and the Section 401 Water Quality Certification, the Construction in a Floodway Permit covers only those activities shown on the plans or specifically listed in the permit. No other activity is allowed in the floodway such as clearing or filling beyond the construction limits. Should the contractor wish to conduct such activity, then it is contractor's responsibility to contact the IDNR to obtain a waiver of the permit. INDOT is responsible for the proper disposal of items taken from INDOT right-of-way, especially if they are placed in the floodway. Such activity would require a permit.

The Construction in a Floodway Permit often contains conditions. A typical condition for this permit would be *when dewatering the cofferdam, the sediment laden water should not be emptied directly into the waterway. Instead it should be either filtered through silt screens or some similar method to remove the sediments, or placed in a sediment pond until the sediment has dropped out. Then the water can be emptied back into the waterway.*

These conditions carry the force of law, and must be adhered to. They must be understood and complied with. They are currently being included in the letting package. The permit must be posted at the construction site. It is the project engineer's responsibility to be familiar with these conditions, and comply with them at all times. If there are conditions that you cannot feasibly comply with, contact the Division of Operations Support for assistance. Do not ignore any conditions. **Remember, if you have one permit for an activity, you are not exempted from obtaining all required permits for the same work. Make sure you have obtained all other required permits.**

See the Construction in a Floodway, Laws and Regulations section for more detailed information.

Endangered Species

Various species of mussels are endangered and are found in major and some minor waterways in Indiana. The environmental document and the permit **(Construction in a Floodway Permit issued by the Department of Natural Resources, Division of Water, under the Flood Control Act, IC 14-28-1)** which is included in the contract documents, should mention any endangered species in the area of the bridge project and the protective measures that are required to ensure that no impact is made to either the life forms or their habitat. Special conditions may be attached to the permits to protect the species of mussels. They must be adhered to. They may include the use of cofferdams, in channel time limits, and specific erosion

control measures. To protect these mussels during the construction of the cofferdam, care must be taken not to introduce excessive sediment runoff into the waterway. When dewatering the cofferdam, the sediment-laden water should not be emptied directly into the waterway. Instead it should either be filtered through a silt screen or some similar method to remove the sediments, or placed in a sediment pond until the sediment is dropped out. Then the water can be emptied back into the waterway.

See the Endangered Species Section of the Laws and Regulations Section for detailed information (State Endangered Species Act IC 14-22-34).

In stream Blasting

Indiana Fish and Wildlife Code requires that a permit be procured from the Indiana Department of Natural Resources prior to setting, using or discharging dynamite or other explosive in any waters of the State.

See the In stream Blasting Section of the Laws and Regulations Section for detailed information.

Lake Preservation Act (Permit)

The Lake Preservation Act mandates that any person proposing to perform an activity at or lakeward of the legal shoreline or average normal water level (mark) of a public freshwater lake must obtain written approval of the Indiana Department of Natural Resources prior to initiating the activity. A *public freshwater lake* is a naturally occurring body of water for which access is provided by the property owner to the general public, **excluding** Lake Michigan, lakes within the city of Hammond, borrow pits, sinkholes, or privately owned water bodies associated with surface coal mining. Most public freshwater lakes are located in the northern part of the state.

Exemption from the Construction in a Floodway Permit does not exempt you from obtaining a Lake Preservation Act Permit. Remember, if you have one permit for an activity, you are not exempted from obtaining all required permits for the same work. Make sure you have obtained all other required permits.

See the Lake Preservation Act Section of the Laws and Regulations Section for detailed information.

Navigable Waterway Permit

A Navigable Waterway permit is required from IDNR when working below the ordinary high water mark within the floodplain of a navigable waterway. This includes any activity, which disturbs sediments below the high water mark, including construction of a cofferdam. A list of navigable waterways is included in the Laws and Regulations Section under Navigable Waterway Permit.

The construction of a cofferdam in and of itself may require a permit. The use of a cofferdam may or may not be included in the permit that INDOT obtains. If it is not mentioned, and the contractor chooses to construct one, then it is his responsibility to obtain a permit for this activity. The project engineer should make sure that the contractor has the permit. Typically IDNR requires only two to three weeks to assess applications for structures or work within a

navigable waterway if it is associated with a previously approved project. Otherwise, 90 to 180 days are required to complete project review.

An IDNR Construction in a Floodway Permit can also serve as a Navigable Waterway Permit. However, exemption from the Construction in a Floodway Permit does not exempt you from obtaining a Navigable Waterway Permit.

See the Navigable Waterway Permit Section of the Laws and Regulations Section for further information.

Section 401 Water Quality Certification

Excavation and/or discharges of dredged or fill materials in waters of the United States below the ordinary high water elevation on each bank requires a U.S. Army Corps of Engineer's Section 404 Permit and possibly a Section 401 Water Quality Certification prior to the commencement of construction. For non-tidal waters, the limits of jurisdiction are as follows:

1. No wetlands present - jurisdiction is between the limit of the ordinary high water elevation on each bank.
2. When adjacent wetlands are present - the jurisdiction extends beyond the ordinary high water mark to the limits of the adjacent wetlands.
3. When only wetlands are present, the limit of jurisdiction extends to the limits of the wetlands.

Waters of the United States, generally speaking, include rivers, streams, creeks, intermittent tributaries, natural ponds, prairie potholes, impoundments, lakes and wetlands.

The Section 401 Water Quality Certification is the state's certification to the U.S. Army Corps of Engineers that the project complies with the state's water quality standards. The Indiana Department of Environmental Management (IDEM) is responsible for the Section 401 Water Quality Certificate review process in Indiana.

The construction of a cofferdam in and of itself may require a permit. The use of a cofferdam may or may not be included in the permit that INDOT obtains. If it is not mentioned, and the contractor chooses to construct one, then it is his responsibility to obtain a permit for this activity. The project engineer should make sure that the contractor has the permit.

The Section 401 Water Quality Certificate often contains conditions. Typically these conditions might include items such as:

- no vegetation removal beyond construction limits
- install and maintain erosion control features
- no impacts to jurisdictional wetlands
- no in stream work between April 1 through June 30
- no silting and muddying waters of U.S.
- when dewatering cofferdams, the sediment laden water should not be emptied directly into the waterway. Instead it should be either filtered through silt screens or some similar method to remove the sediments, or placed in a sediment pond until the sediment has settled. Then the water can be emptied back into the waterway. The permits may have specific guidance with this matter.

These conditions carry the force of law, and must be adhered to. They must be understood and complied with. They are currently being included in the letting package, and also should be posted at the construction site at all times. It is the project engineer's responsibility to be familiar with these conditions, and comply with them. If there are conditions that you cannot feasibly comply with, contact the Division of Operations Support for assistance. Do not ignore any conditions. **Remember, if you have one permit for an activity, you are not exempted from obtaining all other required permits for the same work. Make sure you have obtained all required permits.**

See the Section 401 Water Quality Certification Section.

Solid Waste Disposal

Uncontaminated dirt, rock, bricks, concrete and dried asphalt may be disposed of on INDOT property or in a Municipal Solid Waste Landfill (MSWLF). Concrete and solidified asphalt is not considered hazardous materials. These materials may be used as clean fill or buried on INDOT property. When buried on INDOT property permission must be received from the Project Engineer. The material should be buried where no construction activity will take place. Disposal of the waste materials on private property will require written notification from the property owner. Necessary arrangements shall be made with the owner for obtaining a suitable disposal location. These materials may also be disposed of in a Construction/Demolition landfill site. No material will be disposed of in waters of the US or in a floodway without the proper permits.

See the Solid Waste Disposal Section of the Laws and Regulations Section.

Spill Response

Hazardous material releases, oil spills, fish/animal kills and radiological incidents must be reported to Office of Emergency Response, IDEM immediately **(888) 233-7745.** This should occur as soon as action has been taken to either contain/control the extent of the release, or protect persons, animals or fish from harm or further harm. Appropriate response actions for spills occurring on project sites, in order:

1. Identify the spilled material from a safe distance,
2. Contain the spilled material or block/restrict its flow using absorbent booms/
   pillows, dirt, sand or by other available means,
3. Cordon off the area of the spill,
4. Deny entry to the cordoned off area to all but response personnel, and
5. Contact OER/IDEM then Operations Support.

See the Spill Response Section of the Laws and Regulations.

Pile Driving

Army Corps of Engineers Section 404/Section 10 Permits (U.S.)

Placing pilings in **navigable waters** of the U.S. requires a **Section 10 Permit**. Placing pilings in **waters of the U.S.** in such a manner that it has the **effect of discharging fill material requires a Section 404 Permit**. The **following** placement of pilings in waters of the U.S. generally **does not** require a Section 404 Permit:

1. Placement of pilings for linear projects such as bridges, elevated walkways, power line structures.
2. Placement of pilings for piers, wharves, and individual houses on stilts.

See the Army Corps of Engineers Section of the Laws and Regulations Section.

Filling Around Structure

See Foundation Excavation Section

Falsework

Archeological/Historic Preservation

During the environmental document preparation phase, the proposed right-of-way is cleared archeologically and historically. An archeological records check and an archeological reconnaissance, if necessary, are conducted for the project area. Previously undisturbed existing and proposed right-of-ways are usually included in the archaeological reconnaissance. The findings of the archeological reconnaissance and historical data are included in the environmental document. Despite these precautions, on rare occasions, artifacts are discovered during construction. Construction crews and project engineers should be alert to the presence of:

- properties 50 years old or older,
- archeological artifacts (such as bones, stone tools including arrowheads, pottery),
- features (such as shell or charcoal concentrations, foundations, etc.), and

- human remains.

If artifacts, features, or remains are uncovered during the falsework activity, state law requires that the work stop in the area of the discovery, and that the discovery be reported to the Division of Historic Preservation and Archaeology, IDNR, within 2 working days. **First notify the Division of Operations Support of the finding, then report the discovery to IDNR at (317) 232-1646, FAX (317) 232-8036. Do not allow anyone to collect artifacts from the discovery except the appropriate IDNR or INDOT archaeological staff.**

The archaeological staff will delineate the limits of the work stoppage. Work on the remainder of the project can proceed as normal. If the discovery is of sufficient importance, IDNR may wish to properly excavate the area and have it guarded. If this occurs, contact the Division of Operations Support for guidance.

See Archeological and Historic Section in the Laws and Regulations Section for further information.

Army Corps of Engineers Section 404/Section 10 Permits (U.S.)

Excavation and/or discharges of dredged or fill materials in waters of the United States below the ordinary high water elevation on each bank requires a U.S. Army Corps of Engineer's Section 404 Permit prior to the commencement of construction. Section 404 of the Clean Water Act requires a permit for filling and grading work, mechanized land clearing, ditching or other excavation activity and piling installation. A Section 10 Permit is required for the obstruction or alteration of navigable waters of the U.S. This authority is based on the Rivers and Harbors Act and regulates work riverward or below the ordinary high water elevation of a navigable stream. Navigable waters of the U.S. are those waterways that are now used, or have been used in the past, or may be used in the future to transport interstate or foreign commerce. Note that waterways that are navigable waters under the Rivers and Harbors Act are not necessarily the same as navigable waterways as defined by Indiana's Flood Control Act. Engineer Form 4345, *Application for a Department of Army Permit* is used to apply for these permits. Only one application is required should both permits be required. The Corps will issue the appropriate permit and/or letter of permission (Section 10 or Section 404) needed for the activity.

For the Section 404 permit in non-tidal waters, the limits of jurisdiction are as follows:

1. No wetlands* present - jurisdiction is between the limit of the ordinary high water elevation on each bank.
2. When adjacent wetlands are present - the jurisdiction extends beyond the ordinary high water mark to the limits of the adjacent wetlands.
3. When only wetlands are present, the limit of jurisdiction extends to the limits of the wetlands.

Waters of the United States include rivers, streams, creeks, intermittent tributaries, natural ponds, prairie potholes, impoundments, lakes and wetlands. They do not include land that was converted from wetland to cropland prior to December 23, 1985, nor do they include waste treatment systems such as treatment ponds or lagoons designed to meet the requirement of the Clean Water Act.

INDOT is responsible for the proper disposal of items taken from our right-of-way, especially if it is to be placed within waters of the United States, including wetlands. This is true

whether the items are placed in INDOT's or on private property. The project engineer/ supervisor should ensure that a permit has been obtained, if one is required, prior to approving such disposal.

The Section 404/Section 10 Permit only covers those activities detailed by the plans and the conditions of the permit. If an activity is not shown either on the plans or in the permit conditions themselves, then these activities are not allowed if they occur in the waters of the United States. The erection of false work occurring in waters of the United States requires a U.S. Army Corps of Engineers Section 404 Permit. If false work is not specifically stipulated in the permit, then the construction of one requires its own U.S. Army Corps of Engineers Section 404 Permit. If the contractor chooses to construct false work, and it is not mentioned in the project's permits, then it is his responsibility to obtain the appropriate permits. Make sure he has them. The same is true for temporary work causeways. Read the permit. It tells you what you can and cannot do. If an activity is not specifically allowed in the permit or shown in the plans and the contractor wishes to conduct this activity, then it is the responsibility of the contractor to obtain a permit or modification of the permit for the activity. The Corps will consider modification of the terms and conditions of the permit if requested to do so. If it is mutually agreed to do so, the Corps of Engineers will give the permittee written notice of the modification, which will become effective on the date established by the Corps of Engineers.

The permit often contains conditions. Conditions of the permits may include items such as the following:

- no impacts to jurisdictional wetlands
- no silting and muddying of streams
- utilization of temporary seeding to avoid soil erosion
- no frequent fording of live streams

These conditions carry the force of law, and must be adhered to. They must be understood and complied with. They are currently being included in the letting package. The permit must be posted at the construction site. It is the project engineer's responsibility to be familiar with these conditions, and comply with them at all times. If there are conditions that you cannot feasibly comply with, contact the Division of Operations Support for assistance. Do not ignore any conditions. **Remember, if you have one permit for an activity, you are not exempted from obtaining all required permits for the same work. Make sure you have obtained all other required permits.**

* 'Wetlands' here means jurisdictional wetlands. A jurisdictional wetlands is an area that has undergone the process of identification and delineation as laid out in the January 1987 *Final Report by the Corps of Engineers Wetlands Delineation Manual,* Technical Report Y-87-1, and found to be consistent with the wetlands requirements of the manual.

See Army Corps of Engineers Section 404/Section 10 Permit (U.S.) in the Laws and Regulations Section.

Coast Guard (U.S.) Bridge Permit and Activity Letter

The US Coast Guard protects navigable waters of the U.S., in part, by regulating bridge-related activities. Navigable waters are any waters that are, once were, or may be used in the future to transport interstate or foreign commerce. A bridge may not be constructed across any of the listed navigable waters shown in the Laws and Regulations Section until the US Coast

Guard has approved the location and the plans. Approval is shown by the issuance of a Bridge Permit. The 8th and 9th Coast Guard Districts regulate activities for the State of Indiana. The jurisdiction of each district and their areas of concern related to bridges are described in the Laws and Regulations Section.

The erection of falsework will require Coast Guard approval. The use of falsework may or may not be included in the permit that INDOT obtains. If it is not mentioned in the permit and the contractor chooses to construct one, then it is the responsibility of the contractor to obtain approval from the Coast Guard for this activity. The approval letters with conditions will be issued to the State of Indiana (INDOT). The Project Engineer should make sure that the Coast Guard has approved the work before any work related to this subject begins.

The approval from the Coast Guard will contain conditions. The conditions carry the force of law, and must be adhered to. They must be understood and complied with. Conditions of the permits are currently being included in the letting package. The permit should be available at the construction site at all times. If there are conditions that you cannot feasibly comply with, contact the Division of Operations Support for assistance. The conditions set forth in any permit or approval letter cannot be ignored. **If you have one permit for an activity, you are not exempted from obtaining all required permits for the same work. Make sure you have obtained all other required permits.**

Se Coast Guard (US) Bridge Permit Section, Laws and Regulations Section.

Construction in a Floodway

Any project involving construction, excavation, or placement of fill within the floodway of any river or stream unless exempted, requires the written approval of the Indiana Department of Natural Resources (IDNR) prior to initiating the activity. A floodway is defined as the channel of a river or stream and those portions of the flood plain adjoining the channel, which are reasonably required to carry and discharge the flood water or flood flow of any river or stream. Typically this is the 100 year floodway. Note that this is a different jurisdictional limit than the U.S. Army Corps of Engineers Section 404 or the Section 401 Water Quality Certification has. Often the floodway is a larger area than the waters of the U.S.

EXEMPTIONS

Drainage Area

Except for the construction of dams, dikes, or levees, work in floodways along rivers and streams where the drainage area is less than 1 square mile, requires no Construction in a Floodway Permit.

Bridge Exemption

Generally, any activity, which disturbs soil or sediments within the floodway, and does not meet the requirements of the bridge exemption, requires a permit from IDNR. The Flood Control Act contains an exemption for certain bridge projects involving the construction or

reconstruction of a state or county highway department bridge. In order for a bridge project to be exempt from obtaining a Construction in a Floodway permit, the following criteria must be met:

1. The project must be a state or county highway department project;
2. The project must be a bridge (IDNR considers a culvert to be a bridge) project;
3. The project must be located in a rural area. A rural area is defined as an area where:
   - A. The lowest floor elevation (including basement) of any residential, commercial, or industrial building impacted by the project is at least 2 feet above the 100 year flood elevation with the project in place;
   - B. The project is located outside the corporate boundaries of a consolidated or an incorporated city or town; and
   - C. The project is located outside of the territorial authority for comprehensive planning (generally a 2 mile buffer around a city or town).
4. The project must cross a stream having an upstream drainage area of less than fifty (50) square miles.

All four criteria must be met in order for a project to be eligible for the exemption.

If a bridge project does not qualify for the exemption, then the erection of falsework in and of itself may require a permit. The use of falsework may or may not be included in the permit that INDOT obtains. If it is not mentioned, and the contractor chooses to construct one, then it is his responsibility to obtain a permit for this activity. The project engineer should make sure that the contractor has the permit. Typically, IDNR requires only two to three weeks to assess applications for structures or work within a floodway if it is associated with a previously approved project. Otherwise 90 to 180 days is required to complete a project review.

This exemption only applies to the Flood Control Act. If a bridge is to be constructed over a navigable waterway, or over or near a public freshwater lake, a permit will be required.

Read the permit. It tells you what you can and cannot do. As with the U.S. Army Corps of Engineers Section 404 Permit and the Section 401 Water Quality Certification, the Construction in a Floodway Permit covers only those activities shown on the plans or specifically listed in the permit. No other activity is allowed in the floodway such as clearing or filling beyond the construction limits. Should the contractor wish to conduct such activity, then it is contractor's responsibility to contact the IDNR to obtain a waiver of the permit. INDOT is responsible for the proper disposal of items taken from INDOT right-of-way, especially if they are placed in the floodway. Such activity would require a permit

The Construction in a Floodway Permit often contains conditions. These conditions carry the force of law, and must be adhered to. They must be understood and complied with. They are currently being included in the letting package. The permit must be posted at the construction site. It is the project engineer's responsibility to be familiar with these conditions, and comply with them at all times. If there are conditions that you cannot feasibly comply with, contact the Division of Operations Support for assistance. Do not ignore any conditions. **Remember, if you have one permit for an activity, you are not exempted from obtaining all required permits for the same work. Make sure you have obtained all other required permits.**

See the Construction in a Floodway Laws and Regulations section for details.

Endangered Species

Various species of mussels are endangered and are found in major and some minor waterways in Indiana. The environmental document and the permit **(Construction in a Floodway Permit issued by the Department of Natural Resources, Division of Water, under the Flood Control Act, IC 14-28-1)** which is included in the contract documents, should mention any endangered species in the area of the bridge project and the protective measures that are required to ensure that no impact is made to either the life forms or their habitat. Special conditions may be attached to the permits to protect the species of mussels. The erection of falsework may be a permit condition to minimize impacts to mussel species. Other conditions may include the use of in channel time limits, and specific erosion control measures. To protect these mussels during the erection of falsework, care must be taken not to introduce excessive sediment into the waterway.

Likewise, removal of large trees with loose bark adjacent to the foundation excavation work may impact the Indiana bat. Time constraints may be placed on the clearing of the right-of-way to protect the bats. These time constraints must be adhered to. If a construction project is scheduled to start at the beginning of these time constraints and the right-of-way has been secured; it might be wise to send INDOT personnel out to fell all large trees prior to this time period (April 15 to September 15). If previously unknown endangered species are found at a project site, contact the Division of Operations Support immediately at (317) 234-0409 for assistance.

See the Endangered Species Section of the Laws and Regulations Section for detailed information (State Endangered Species Act IC 14-22-34).

In stream Blasting

Indiana Fish and Wildlife Code requires that a permit be procured from the Indiana Department of Natural Resources prior to setting, using or discharging dynamite or other explosive in any waters of the State. **Exemption from the Construction in a Floodway Permit does not exempt you from obtaining an In-stream Blasting Permit. Remember, if you have one permit for an activity, you are not exempted from obtaining all required permits for the same work. Make sure you have obtained all other required permits.**

See the In Stream Blasting Section of the Laws and Regulations Section for detailed information.

Lake Preservation Act (Permit)

The Lake Preservation Act mandates that any person proposing to perform an activity at or lakeward of the legal shoreline or average normal water level (mark) of a public freshwater lake must obtain written approval of the Indiana Department of Natural Resources prior to initiating the activity. A *public freshwater lake* is a naturally occurring body of water for which access is provided by the property owner to the general public, **excluding** Lake Michigan, lakes within the city of Hammond, borrow pits, sinkholes, or privately owned water bodies associated

with surface coal mining. Most public freshwater lakes are located in the northern part of the state.

Exemption from the Construction in a Floodway Permit does not exempt you from obtaining a Lake Preservation Act Permit. Remember, if you have one permit for an activity, you are not exempted from obtaining all required permits for the same work. Make sure you have obtained all other required permits.

See the Lake Preservation Act Section of the Laws and Regulations Section for detailed information.

Navigable Waterway Permit

A Navigable Waterway permit is required from IDNR when working below the ordinary high water mark within the floodplain of a navigable waterway. This includes the erection of falsework. A list of navigable waterways is included in the Laws and Regulations Section under Navigable Waterway Permit.

The erection of falsework and of itself may require a permit. The erection of falsework may or may not be included in the permit that INDOT obtains. If it is not mentioned, and the contractor chooses to construct one, then it is his responsibility to obtain a permit for this activity. The project engineer should make sure that the contractor has the permit. Typically IDNR requires only two to three weeks to assess applications for structures or work within a navigable waterway if it is associated with a previously approved project. Otherwise, 90 to 180 days are required to complete project review.

An IDNR Construction in a Floodway Permit can also serve as a Navigable Waterway Permit. However, exemption from the Construction in a Floodway Permit does not exempt you from obtaining a Navigable Waterway Permit.

See the Navigable Waterway Permit Section of the Laws and Regulations Section for further information.

Section 401 Water Quality Certification

Excavation and/or discharges of dredged or fill materials in waters of the United States below the ordinary high water elevation on each bank requires a U.S. Army Corps of Engineer's Section 404 Permit and possibly a Section 401 Water Quality Certification prior to the commencement of construction. For non-tidal waters, the limits of jurisdiction are as follows:

1. No wetlands present - jurisdiction is between the limit of the ordinary high water elevation on each bank.
2. When adjacent wetlands are present - the jurisdiction extends beyond the ordinary high water mark to the limits of the adjacent wetlands.
3. When only wetlands are present, the limit of jurisdiction extends to the limits of the wetlands.

Waters of the United States, generally speaking, include rivers, streams, creeks, intermittent tributaries, natural ponds, prairie potholes, impoundments, lakes and wetlands.

Remember that the construction of false work occurring in from waters of the United States requires a Section 401 Water Quality Certification. If false work is not specifically

stipulated in the permit, then the construction of one requires its own Section 401 Water Quality Certification. If the contractor chooses to construct false work, and it is not mentioned in the project's permits, then it is his responsibility to obtain the appropriate permits. Make sure he has them. The same is true for temporary work causeways.

The Section 401 Water Quality Certification is the state's certification to the U.S. Army Corps of Engineers that the project complies with the state's water quality standards. The Indiana Department of Environmental Management (IDEM) is responsible for the Section 401 Water Quality Certificate review process in Indiana. The Section 401 Water Quality Certificate often contains conditions. Typically these conditions might include items such as:

- no impacts to jurisdictional wetlands
- no in stream work between April 1 through June 30
- no silting and muddying of the waters of the U.S.

These conditions carry the force of law, and must be adhered to. They must be understood and complied with. They are currently being included in the letting package, and also should be posted at the construction site at all times. It is the project engineer's responsibility to be familiar with these conditions, and comply with them. If there are conditions that you cannot feasibly comply with, contact the Division of Operations Support for assistance. Do not ignore any conditions. **Remember, if you have one permit for an activity, you are not exempted from obtaining all other required permits for the same work. Make sure you have obtained all required permits.**

See the Section 401 Water Quality Certification Section of the Laws and Regulations Section for further information.

Solid Waste Disposal

Uncontaminated dirt, rock, bricks, concrete and dried asphalt may be disposed of on INDOT property or in a Municipal Solid Waste Landfill (MSWLF). These materials are not subject to the solid waste regulations. Concrete and dried asphalt may be used as clean fill material. When buried on INDOT property permission must be received from the Project Engineer. The material should be buried where no construction activity will take place. Disposal of the waste materials on private property will require written notification from the property owner. Necessary arrangements shall be made with the owner for obtaining a suitable disposal location. These materials may also be disposed of in a Construction/Demolition landfill site. No material will be disposed of in waters of the US or in a floodway without the proper permits.

See the Solid Waste Disposal Section of the Laws and Regulations Section.

Spill Response

Hazardous material releases, oil spills, fish/animal kills and radiological incidents must be reported to Office of Emergency Response, IDEM immediately **(888) 233-7745**. This should occur as soon as action has been taken to either contain/control the extent of the release, or protect persons, animals or fish from harm or further harm. Appropriate response actions for spills occurring on project sites, in order:

1. Identify the spilled material from a safe distance,
2. Contain the spilled material or block/restrict its flow using absorbent booms/pillows, dirt, sand or by other available means,
3. Cordon off the area of the spill,
4. Deny entry to the cordoned off area to all but response personnel, and
5. Contact OER/IDEM then Operations Support.

See Spill Response Section, of the Laws and Regulations Section for information.

Painting

Lead

Lead has been an additive to paints, because it helped them to dry faster and it made a coating that stood up to wear and tear and weather changes. Of the eight RCRA metals, lead and chromium are the two that were most commonly used in bridge paints such as AASHTO M72 and M229. Barium compounds have been used as extender pigments for coatings, though not in the AASHTO materials referenced, and in some non-lead alternative formulations. Cadmium compounds have been used as a coloring pigment.

Residue from blasting bridges must be tested for lead to determine if it is a solid or hazardous waste. **Do not mix samples from different bridges.** Sandblasting residue at a minimum is a solid waste and requires approved solid waste landfill disposal. The TCLP test method is used to measure the leachable content of the waste. The results of a laboratory test are only as good as the samples, which are submitted. US EPA test procedure requires that at least four samples be randomly taken and analyzed. IDEM requires that sampling be performed at uniform representative sites on the bridge and that the testing procedure uses the TCLP analytical procedure. The testing method depends on the landfill identified as the potential disposal site. The landfill will require certain testing procedures be followed. When 75% of the blasting job is done, you can test the debris to determine if it is a solid or hazardous waste. While obtaining four samples for analysis is required, it is not necessary to analyze all four samples. **Analysis of one sample is enough to classify the waste as hazardous. A minimum of four samples is only needed to classify a waste as non-hazardous.**

Containment of sandblasting material is required at a minimum of class 3A for zinc based and 2A for lead based paint (Steel Structures Painting Council Lead Paint Removal). Failure to contain residue is a violation. When entering areas where paint has been disturbed proceed with caution and follow all applicable requirements. Lead can be inhaled and ingested. The presence of lead requires that site storage requirements for hazardous waste be followed whether or not the waste is found to be hazardous. The lead-containing debris must be stored in a manner that will not allow entry of any hazardous material into the environment. The storage site must be secured. Security includes protection of entry of hazardous material into the environment and security of the waste from vandalism. Security begins with the choice of a suitable location.

The waste must be stored in containers that are capable of being securely closed. Tops must be kept on the containers so that rain cannot enter nor can the material blow out. Drums cannot be stored more that two high or two wide. Each container must have labels identifying the contents and dates of accumulation. The labels must be easily visible. The generator can perform Onsite transportation of hazardous waste. However a licensed hazardous waste

transporter must perform offsite movement of hazardous waste. Onsite transport is limited to movement of the waste from the work site to the storage area.

RCRA regulates the amount of time a hazardous waste can be accumulated on site. A large quantity generator can accumulate waste for no more than 90 days. A 30-day extension can be obtained from the IDEM if problems occur. Failure to meet this time limit will result in the site being classified as an unlicensed hazardous waste storage facility, and heavy fines can result. The accumulation time starts when debris is first placed in the container, not from the time it is tested and found to be a hazardous. INDOT must obtain an EPA identification number from IDEM.

Restricted waste requires notification and certification. Restricted waste is defined as waste restricted from land disposal, a hazardous waste. You must notify IDEM of your activities. A hazardous waste manifest must accompany each load of hazardous waste. Bridge waste having 5 parts per million or more lead is a hazardous waste. A hazardous waste manifest must be signed by the generator and accompany each load of hazardous waste from cradle to grave. Care must be taken to avoid exceeding storage limits for waste.

INDOT has obtained a statewide Solid Waste Certification for paint residue that is solid waste. Individual certification for every bridge's solid waste is no longer required. Use the statewide Solid Waste Certification. A copy of the certification is provided in the Lead Section.

See the Lead Section of the Laws and Regulations Section for information.

Temporary Bridges

See Falsework Section